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10/782,645	02/19/2004	Vanadis Mack Crawford	RSW920040012US1	4115
25259 7590 07/25/2008 IBM CORPORATION 3039 CORNWALLIS RD. DEPT. T81 / B503, PO BOX 12195 RESEARCH TRIANGLE PARK, NC 27709				
EXAMINER				
MILLER, ALAN S				
ART UNIT		PAPER NUMBER		
3623				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

RSWIPLAW@us.ibm.com

Office Action Summary

Application No.

10/782,645

Applicant(s)

CRAWFORD ET AL.

Examiner

ALAN MILLER

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to the application filed on 02/19/2004.

Claims 1 – 16 are pending and have been examined.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims **1-8** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims **1-8** are rejected under 35 U.S.C. 101 based on Supreme Court precedent, and recent Federal Circuit decisions, the Office's guidance to examiners is that a § 101 process must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. (*Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780,787-88 (1876)).

An example of a method claim that would not qualify as a statutory process would be a claim that recited purely mental steps. Thus, to qualify as a § 101 statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the

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method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state.

Here, applicant's method steps, fail the first prong of the new Federal Circuit decision since they are not tied to another statutory class and can be preformed without the use of a particular apparatus.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims **5-8** and **13-16** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims **5** and **13** disclose a matrix of numerical weights. It is not clear, from either the specification or the claims, how this matrix of weights is determined. The specification discloses a partial score is computed for each customer interest category by summing numerically weighted values of the supplier metrics, ¶017, and gives a preferred embodiment regarding customer interest categories, supplier metrics and their corresponding weights, but does not give any explanation, either explicitly or implicitly,

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how these weights were obtained, nor how one of ordinary skill would obtain the weights, with either the same categories, or with different categories.

Claims **6-12** and **13-16** are rejected as being dependent off of claims **5** and **13** respectively.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims **2,3,6,7,10,11,14** and **15** are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention.

Claims **2,3,6,7,10,11,14** and **15** recite the limitation "the set consisting" in lines 1 and 2 of the claims. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims **1** and **9** are rejected under 35 U.S.C. 102(b) as being anticipated by Ostrowski et al. (U.S. Patent 6,301,516, hereinafter Ostrowski).

8. In respect to claims **1** and **9**, Ostrowski discloses:

evaluating supplier metrics (e.g. key control parameters) for customer interest categories (e.g. critical to quality characteristics) to provide numerical values for a software product requirement (e.g. *The quality matrices provide for tracking and assessing the relationship between critical to quality characteristics and key control parameters within a level and between levels of the design process* (column 2, lines 1-4; FIG 2.), *For each critical to quality characteristic and each key control parameter , an interaction weight is assigned representing the effect that a key control parameter has on a critical to quality characteristic . The interaction weights shown in FIG. 2 are h, m, and l representing high, medium and low respectively* (column 2, lines 23-29),) *A total score is generated for each key control parameter as shown in row . Each interaction weight may be assigned a numerical value. In the example shown in FIG. 2, low has a value of 1, medium has a value of 3 and high has a value of 9* (column 2, lines 33-37));

computing partial scores for the customer interest categories by weighting and summing the numerical values (e.g. *Each critical to quality characteristic is assigned an importance or weight as shown in column 114. The critical to quality weights range from 1 to 5 (with 5 being the highest) depending on how important each critical to quality characteristic is to customer expectation. It is understood that different weights may be used..., the interaction weights are multiplied by the*

critical to quality weights along a column of the matrix (column 2, lines 33-40)).

Examiner notes that multiplying each interaction weight by the critical to quality weight for each characteristic forms partial scores;

determining an overall score for the software product requirement from the partial scores (e.g. *To generate the total score for each key control parameter 112, the interaction weights 116 are multiplied by the critical to quality weights 114 along a column of the matrix and these products are summed. If a key control parameter is not assigned an interaction weight, its interaction weight is zero. For example, key control parameter x1 has a high interaction weight with critical to quality characteristic y1 and a low interaction weight with critical to quality characteristic y6. The total score for key control parameter x1 is $(9 * 5) + (1 * 1) = 46$ (column 2, lines 33-46)).*

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims **3 - 5, 7, 8, 11 - 13 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ostrowski et al. (U.S. Patent 6,301,516)

11. In respect to claims **3, 7, 11, and 15**, Ostrowski discloses

key control parameters (i.e. supplier metrics), labeled x1-x6 (column 2, lines 5-11). Ostrowski further discloses selecting key control parameters (e.g. *the matrix may be expanded by adding key control parameters* (column 2, lines 16-17)).

Ostrowski does not explicitly disclose wherein the supplier metrics are selected from the set consisting of market penetration, priority as determined by a customer, revenue potential, and state of technology advancement.

Ali discloses supplier metric categories including revenue potential (e.g. *Lamp Cost, Cooling System Cost* (FIG 4A, 104).

It would have been obvious to one of ordinary skill to in the art to include in the categories of Ostrowski at least the specific category of revenue potential of Ali since the specific categories of Ali are merely a subset of the general categories disclosed by Ostrowski, and one of ordinary skill in the art would have recognized that the results of the combination were predictable (*KSR International Co. v. Teleflex Inc.* (KSR), 550 U.S. ___, 82 USPQ2d 1385 (2007)).

12. In respect to claims **4 and 12**, Ostrowski discloses:

determining a total score for each parameter (see at least column 2, lines 45-46).

Ostrowski does not explicitly disclose wherein the step of determining includes a step of averaging non-zero partial scores.

However, it is old and well known to average scores to find a total score.

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Ostrowski to include the old and well known averaging of scores, since the claimed invention is merely a combination of old elements, and the combination would have been a predictable result of the combination to remove any undue influence of any one category when determining a total score by finding an average (*KSR International Co. v. Teleflex Inc.* (KSR), 550 U.S. ___, 82 USPQ2d 1385 (2007))

13. In respect to claims **5** and **13**, Ostrowski discloses:

forming an N by M matrix A of numerical values of supplier metrics for customer interest categories of a soft-ware product requirement, where N is a number of supplier metrics (e.g. key control parameters) and M is a number of customer interest categories (e.g. critical to quality characteristics) (e.g. FIG. 2 depicts a quality matrix ... The quality matrices provide for tracking and assessing the relationship between critical to quality characteristics and key control parameters within a level and between levels of the design process. Critical to quality characteristics 110 are labeled y1-y6 and are arranged in rows. Key

control parameters 112 are labeled x1-x8 and are arranged in columns ... the critical to quality characteristics are customer expectations. The key control parameters 112 are product requirements ... The matrix may be expanded by adding critical to quality characteristics and/or key control parameters (column 1, lines 67-68 through column 2, lines 1-11, 16-17)).

Ostrowski discloses performing matrix operations to find partial scores. Ostrowski performs matrix multiplication by multiplying the N by M matrix of numerical values (i.e. matrix A) (FIG 2, matrix 100) by a M by 1 matrix of numerical weights (FIG 2, 114), to form the N by 1 matrix of partial scores corresponding to supplier metrics (FIG 2., 118). Ostrowski further discloses multiplying each row of the matrix by the numerical weight (scalar multiplication), summing the results for each row and forming an M by 1 matrix of partial scores (FIG 2, 120).

However, Ostrowski does not explicitly disclose multiplying the matrix A by an M by N matrix of numerical weights W, to form the M by M matrix $P=WA$, to provide partial scores.

Examiner takes Official Notice that a matrix can be made to be any size, and that matrix operations are old and well known. The M by 1 matrix of Ostrowski can be represented as an M by N matrix of weights, with the other entries as zeros.

It would have been obvious to one of ordinary skill in the art at the time of the invention to make the matrix of weights of Ostrowski any size, (i.e. M x N or M

by 1), to perform any old and well known matrix operations (i.e. vector, matrix or scalar multiplication), and to form a matrix of partial scores from the result of the matrix operation since the claimed invention is merely a combination of old elements, and it would have been a predictable result of this modification to Ostrowski to give the user of Ostrowski flexibility in determining how many weights to use, and to use any outcome of matrix operations, whether it is vector, matrix or scalar multiplication, to determine scores. (*KSR International Co. v. Teleflex Inc.* (KSR), 550 U.S. ___, 82 USPQ2d 1385 (2007)).

Ostrowski discloses determining scores from the results of the matrix operations (see at least column 2, lines 33-34, 48-50).

However, Ostrowski does not explicitly disclose determining an overall score for the software product requirement from diagonal elements of the matrix P.

It is old and well known in the art to determine values from the diagonal of a matrix.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the determination of scores from the diagonal of the matrix with the determination of scores of Ostrowski, since the claimed invention is merely a combination of old elements, and a predictable result of this combination would have been giving the user of Ostrowski more options for determining scores depending on the user's particular needs (*KSR International Co. v. Teleflex Inc.* (KSR), 550 U.S. ___, 82 USPQ2d 1385 (2007)).

14. In respect to claims **8** and **16**, Ostrowski discloses:

determining scores from the results of the matrix operations (see at least column 2, lines 33-34, 48-50).

However, Ostrowski does not explicitly disclose wherein the step of determining includes a step of averaging non-zero diagonal elements of P.

It is old and well known to average scores to find a total score, and it is old and well known to determine values from the diagonal of a matrix.

Therefore it would have been obvious for one of ordinary skill in the art at the time of the invention to modify Ostrowski to include averaging non-zero diagonal elements of a resulting matrix, as the claimed invention is merely a combination of old elements, and it would have a predictable result of this modification to allow the user of Ostrowski to remove any undue influence of any one category when determining a total score by finding an average (*KSR International Co. v. Teleflex Inc.* (KSR), 550 U.S. ___, 82 USPQ2d 1385 (2007)).

15. Claims **2, 6, 10 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ostrowski et al. (U.S. Patent 6,301,516) in view of Ali et al. (U.S. Patent 6,351,680, hereinafter Ali.)

16. In respect to claims **2, 6, 10 and 14**, Ostrowski discloses:

critical to quality characteristics that are customer expectations (i.e. customer interest categories), labeled y1-y6 (column 2, lines 5-10). Ostrowski further discloses selecting critical to quality characteristics (e.g. *the matrix may be expanded by adding critical to quality characteristics* (column 2, lines 16-17)).

However, Ostrowski does not explicitly disclose wherein the customer interest categories are selected from the set consisting of capability, usability, performance, reliability, interoperability, maintainability, documentation, and serviceability.

Ali discloses customer interest categories including performance and reliability (e.g. *Lamp Brightness*, *Lamp Life* (FIG 4A, 102).

It would have been obvious to one of ordinary skill to in the art to include in the categories of Ostrowski the specific categories of reliability and performance of Ali since the specific categories of Ali are merely a subset of the general categories disclosed by Ostrowski, and one of ordinary skill in the art would have recognized that the results of the combination were predictable (*KSR International Co. v. Teleflex Inc.* (KSR), 550 U.S. ___, 82 USPQ2d 1385 (2007)).

Conclusion

17. The prior art made of record and not relied upon considered pertinent to

Applicant's disclosure.

- a. Gorenstein et al. (US Patent Pub. 2003/0009369) discloses it is old and well known to find a score by averaging scores.
- b. Bonissone et al. (U.S. Patent Pub. 2003/0187701) discloses it is old and well known to sum elements in a diagonal..
- c. Nakano et al. (U.S. Patent Pub. 2002/0184082) discloses a customer satisfaction evaluation method.
- d. Lee (U.S. Patent 5,765,137) discloses correlating product requirements to manufacturing cost.
- e. Zelek et al. (U.S. Patent Pub. 2003/0040954) discloses a method and system for product optimization.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALAN MILLER whose telephone number is (571)270-5288. The examiner can normally be reached on Mon - Thur, 8:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BETH VAN DOREN can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ALAN MILLER/
Examiner, Art Unit 3623

/Beth Van Doren/
Supervisory Patent Examiner, Art Unit 3623